

CLAIMS

1. A method for imparting anti-static characteristics to fuel, the method comprising supplying a hydrocarbon fuel; and mixing the fuel with metal ion to reduce the electrical resistance of the fuel.
2. The method as recited in claim 1 wherein the metal ion is contained in a salt selected from the group consisting of LiBr, KBr, MgBr, and combinations thereof.
3. The method as recited in claim 1 wherein the ion is contained in a coordination complex containing a metal selected from the group consisting of Li, K, Mg, Ca, Na, Cs, Be, Sr, Ba, and combinations thereof.
4. The method as recited in claim 1 wherein the metal comprises an alkaline metal.
5. The method as recited in claim 1 wherein the step of mixing fuel with a metal ion is preceded by solubilizing a salt containing the metal ion with a solvent.
6. The method as recited in claim 5 wherein the solvent is an organic compound selected from the group consisting of a ketone, an alcohol, an aldehyde, and combinations thereof.

1 7. A method for reducing the electrical charge in fuel, the method comprising;
2 supplying a hydrocarbon fuel, and adding a metal salt solution to said hydrocarbon fuel.

1 8. The method as recited in claim 7 wherein the solution comprises a salt present in a
2 solvent in a weight ratio of between 0.0001:1.0 to 0.01:1.0 salt:solvent.

1 9. The method as recited in claim 7 wherein the salt solution is present in the fuel in a
2 volume percent of between 0.0001 to 0.01.

1 10. The method as recited in claim 9 wherein the solvent is a liquid selected from the
2 group consisting of an alcohol, a ketone, an aldehyde, and combinations thereof.

1 11. The method as recited in claim 10 wherein the alcohol is present with water in a
2 volume ratio of between 0.1% to 99.5%.

1 12. The method as recited in claim 11 wherein the ketone is present with water in a
2 volume ratio of between 0.1% to 99.5%.

1 13. A method for increasing combustion characteristics of a fuel, the method
2 comprising supplying a hydrocarbon fuel; and minimizing static electricity accumulations
3 in the fuel prior to combustion.

1 14. The method recited in claim 13 wherein the step of minimizing static electricity
2 includes the step of adding a metal salt solution to said hydrocarbon fuel.

1 15. The method as recited in claim 14 wherein the metal salt solution comprises a salt
2 present in a solvent.

1 16. The method as recited in claim 15 wherein the solvent is a liquid selected from the
2 group consisting of an alcohol, a ketone, an aldehyde, and combinations thereof.

1 17. The method as recited in claim 13 wherein the step of minimizing static electricity
2 charge includes the step of mixing said hydrocarbon fuel with a salt selected from the
3 group consisting of LiBr, KBr, MgBr, and combinations thereof.

1 18. The method as recited in claim 13 wherein the step of minimizing static electricity
2 charge includes the step of adding a coordination complex containing a metal selected
3 from the group consisting of Li, K, Mg, Ca, Na, Be, Cs, Sr, Ba, and combinations thereof.

1 19. The method as recited in claim 18 wherein the coordination complex is present in
2 the fuel in a volume percent of between 0.0001 to 0.01.

1 20. The method as recited in claim 13 wherein the step of minimizing static electricity
2 accumulations comprises electrically connecting the accumulations to each other via a
3 solubilized metal.

1 21. A substance to decrease static charge in ligand fuels, the substance comprising an
2 alkaline metal homogeneously disbursed throughout electrically non-conductive fuel.

1 22. The substance as recited in claim 21 wherein the alkaline metal is present in the
2 fuel in weight ratio of between 0.0000078:1.0 to 0.01:1.0.

1 23. The substance as recited in claim 21 wherein static electric charge is reduced to
2 between approximately 22 percent and 50 percent of the original charge.